Investment-Provider Data for Funds Methodology

Introduction

The Morningstar Investment Provider methodology is used to analyze the effectiveness and practices of firms that are advising or subadvising funds. The investment-provider analytics are calculated for funds available from investment providers in a single market, combining the data of funds that belong to the same fund firm, allowing researchers to compare the relative strengths and weaknesses of different investment providers.

The investment provider is identified by the firm name in Morningstar’s data. In the United States, usually all of a firm’s advised funds fall under the same investment provider. For example, Fidelity Investments is the investment provider that links the hundreds of Fidelity funds offered by the firm. This field identifies the firm making the day-to-day portfolio management decisions, providing an efficient way to combine directly advised funds and funds where the same firm is the sole subadvisor.

Morningstar analysts apply qualitative judgment to ensure that investment providers are accurately considered when they are part of a larger parent organization with multiple asset management groups. For example, Legg Mason is the parent company for multiple brands of funds, but the firm’s Royce Funds brand is separated from funds offered by its Legg Mason Capital Management, ClearBridge, and Western Asset brands.

The term “fund” denotes open-end registered investment companies, including traditional over-the-counter funds without an intraday price, as well as exchange-listed funds structured as exchange-traded funds or exchange-traded mutual funds, contractual funds, and certain registered trust structures.

Outside the U.S., the same fund firm often has multiple investment providers. Prior to the introduction of the management passport in Undertakings for Collective Investment in Transferable Securities IV (UCITS IV), European asset managers were required to establish operations in each country in which they distributed funds. Separate legal structures still remain common despite the removal of this requirement in 2011, and ultimate parent companies are difficult to ascertain and standardize. Additionally, outside North America, it is rarely required for funds to disclose manager or subadvisory firm names. The lack of systematic availability of this data prevents accurate compilation of investment-provider statistics.

Average Morningstar Rating

Morningstar calculates overall, three-, five-, and 10-year Morningstar Ratings on funds. Rolling up these ratings by provider company shows the average star rating of a provider company’s funds and shows investors and their advisors whether a fund company’s offerings have been successful on a risk-adjusted basis relative to their peers. By ranking this data, an institutional fund buyer can compare firms’ relative
success. And by storing this data in a time series, analysts can estimate whether a fund firm's risk-adjusted performance has improved or deteriorated over time. Share classes with no Morningstar Ratings are excluded from this calculation.

Morningstar provides the following data points:

- Firm Average Morningstar Rating Overall
- Firm Average Morningstar Rating 3-Year
- Firm Average Morningstar Rating 5-Year
- Firm Average Morningstar Rating 10-Year

Equation 1 is applied to each period by investment provider to generate the firm average rating.

\[
\frac{1}{N_f} \sum_{i=1}^{N_f} \left( \frac{1}{N_s} \sum_{j=1}^{N_s} r_{i,j} \right)
\]

Where

\[
\begin{align*}
\text{r}_{i,j} & = \text{Morningstar Rating for share class j of fund i for the time period} \\
N_f & = \text{The total number of funds assigned to the investment provider for which at least one share class has a Morningstar Rating for the period} \\
N_s & = \text{The total number of share classes that have a Morningstar Rating for the period for any fund assigned to the investment provider}
\end{align*}
\]

**Percentage of Assets by Morningstar Rating**

In addition to the simple average, the investment-provider analytics include breakdowns of percentages of assets within each calculated rating. This highlights assets concentrated in 4- and 5-star offerings or whether a firm has produced less-successful funds overall. The asset-weighted figures include unrated funds as if they were a separate rating. Funds do not receive ratings for a variety of reasons, most commonly because of a short track record. Certain structures like master funds and exchange-traded notes are also unrated, and lastly there are some categories that Morningstar Research Services has determined are not appropriate to rate. Together, these tools tell an important story about a fund company’s distribution strategy and relative success.

For the overall rating and the component three-, five, and 10-year ratings, Morningstar publishes the percentage of assets with 5-star, 4-star, 3-star, 2-star, 1-star, and null ratings. This is calculated as the sum of the share-class assets with a specific rating for the specific period, divided by total firm assets. Equation 2 is applied to generate the percentage weightings for each period.

\[
G = \frac{\sum_{r \in R \text{ and } t} w_i \text{ if } r = t}{\sum w_i}
\]

Given: \( R = \{ \text{Null, 1, 2, 3, 4, 5} \} \) and \( t = \{ \text{overall, 3y, 5y, 10y} \} \)
Repeat this equation for all combinations of \( r \) and \( t \).

Where

\[
\begin{align*}
G &= \text{Percentage of assets with a specific rating value} \\
w_i &= \text{Share-class } i \text{ assets as a percentage of the provider’s total assets} \\
r_{it} &= \text{Share-class } i \text{ rating for period } t \\
R &= \text{Possible rating values} \\
t &= \text{Time length of the ratings in the subject calculation}
\end{align*}
\]

**Morningstar Success Ratio**

The Morningstar Success Ratio evaluates whether an investment provider's funds have been successful. The measurement is the proportion of funds where half or more of the fund's share classes have a total return above the median as identified by a trailing-period percentile rank of less than or equal to 50 compared with the total number of funds in existence at the onset of the trailing period. This is calculated for three-, five-, and 10-year periods. The following equation is used to calculate the success ratio:

\[
(3) \quad \text{Success Ratio} = \frac{m_{\theta}}{n_{t-\theta}}
\]

Where

\[
\begin{align*}
m_{\theta} &= \text{The number of funds currently assigned to the investment provider where the majority (or equal number) of the share classes in that fund have a category percentile rank of 50 or better for the period } \theta \text{ as of date } t. \\
n_{t-\theta} &= \text{The number of funds assigned to the investment provider that had at least one active share class at the beginning of the trailing period } \theta \text{ as of date } t, \text{ less any funds that are still active but where none of the share classes in those funds have a category rank. This could be due to the fund having significant restructure in the period or the fund being in a category where Morningstar does not calculate rankings.}
\end{align*}
\]

**Morningstar Risk-Adjusted Success Ratio**

In addition to calculating the success ratio on the total-return rank, Morningstar calculates a success ratio based upon the trailing Morningstar Risk-Adjusted Return (MRAR) percentile rank. This is the same value used to generate star ratings, and as with the total-return success ratio, this is calculated for the three-, five-, and 10-year periods. The following equation is used to calculate the risk-adjusted success ratio:

\[
(4) \quad \text{Risk - Adjusted Success Ratio} = \frac{\xi_{\theta}}{n_{t-\theta}}
\]
Where

\[
\xi_{t-\theta} = \text{The number of funds currently assigned to the investment provider where the majority of the share classes in that fund have a Morningstar Risk-Adjusted Return category percentile rank of 50 or better for the period } \theta \text{ as of date } t.
\]

\[
n_{t-\theta} = \text{The number of funds assigned to the investment provider that had at least one active share class at the beginning of the trailing period } \theta \text{ as of date } t \text{ less any funds that still exist but where none of the share classes in those funds have a category rank. This could be due to the fund having significant restructure in the period or the fund being in a category where Morningstar does not calculate rankings.}
\]

**Average Manager Tenure (Longest)**

Morningstar’s research has found that manager tenure is an important indicator in the analysis of funds and their parent companies. Average manager tenure, based off of the longest named manager, helps investors determine if providers value continuity and the establishment of processes, and if they have good relationships with their employees and portfolio managers. It can also indicate underlying risks within an investment provider. This data point also gives users a tool to estimate if manager turnover is high or low compared with other providers. The calculation shown in Equation 5 is based on the start date of the longest-tenured manager on a fund.

\[
(5) \text{Average Manager Tenure} = \frac{1}{N} \times \sum_{i=1}^{N} \lambda_i
\]

Where

\[
\lambda_i = \text{Longest manager tenure for fund } i
\]

\[
N = \text{The total number of funds for the investment provider}
\]

**Asset-Weighted Manager Tenure (Longest)**

Asset-weighted manager tenure is a complementary to the simple average manager tenure. This data point gives an alternate view of manager tenure within a provider compared with the straight average, highlighting whether tenure is consistent across a shop or skewed toward smaller or larger funds. This is calculated as a fund’s percentage of investment provider total fund assets multiplied by the fund’s longest manager tenure.

\[
(6) \text{Asset-Weighted Manager Tenure} = \sum_{i=1}^{n_f} W_i \lambda_i
\]

Where

\[
\lambda_i = \text{Longest manager tenure for fund } i
\]

\[
W_i = \text{Asset weighting of a fund (fund assets divided by total firm open-end fund assets)}
\]

\[
n_f = \text{The total number of funds assigned to the investment provider}
\]
Percentage of Assets by Longest Manager Tenure

The percentage of assets by longest manager tenure takes a more granular view of manager tenure than other tenure-based measures. This provides a distribution of fund assets based upon a range of tenure.

Morningstar provides the following data points:

- % of assets, with longest manager tenure 0-3 years
- % of assets, with longest manager tenure 3-6 years
- % of assets, with longest manager tenure 6-9 years
- % of assets, with longest manager tenure 9-12 years
- % of assets, with longest manager tenure 12-15 years
- % of assets, with longest manager tenure 15+ years

An example calculation is below, for the percentage of assets with a longest manager tenure of 0-3 years. The above calculations will follow this structure.

\[
\frac{\sum_{i=1}^{n} f_i}{\sum_{i=1}^{n} n_i}
\]

Where

\[
\begin{align*}
  f &= \text{Fund assets} \\
  n &= \text{Number of funds assigned to the investment provider} \\
  m &= \text{Number of funds with a longest manager tenure figure of greater than zero years but less than or equal to three years}
\end{align*}
\]

The calculation is based on the start date of the longest-tenured manager on a fund.

5-Year Manager Retention Rate

The five-year manager retention rate measures an investment provider’s aptitude at keeping portfolio managers at the firm on a long-term basis. This data point is distinct from manager tenure because it measures tenure at the firm, rather than tenure on a fund.

This calculation is completed in two steps, see below. Equation 8a describes calendar-year manager retention rate for one calendar year, while Equation 8b annualizes five consecutive calendar-year retention rates into a five-year manager retention rate.

\[
I = \frac{\sum_{t=1}^{T} M_t}{\sum_{t=1}^{T} M_r}
\]
Where

\[ M_1 = \text{The number of distinct managers that have left the firm. Defined as: The manager’s start date is prior to the calendar year and the manager’s end date is prior to the calendar year-end.} \]

\[ M_r = \text{The number of distinct managers remaining in the firm. Defined as: The manager’s start date is prior to the calendar year and the manager’s end date is either after the calendar year-end or null.} \]

To find the five-year manager retention rate, find the calendar-year manager-retention rate for the previous five calendar years and annualize to get a five-year figure. Below, Equation 8b finds the five-year manager retention rate as of year-end 2010.

\[ [8b] \sqrt{r_c \times r_{c-1} \times r_{c-2} \times r_{c-3} \times r_{c-4}} \]

Where

\[ c = \text{Latest calendar year} \]

\[ r = \text{The calendar-year manager retention ratio for the referenced period} \]

**Percentage of Assets by Manager Investment Level**

Morningstar collects data on U.S. fund manager ownership of fund shares as it is disclosed in funds’ annual Statement of Additional Information filings with the SEC. Rolling up these ratings by U.S. investment provider will show the extent to which fund managers at a given fund family are invested in the funds they manage. Morningstar’s research has shown a correlation between manager ownership of fund shares and stronger longer-term, risk-adjusted returns.

Morningstar provides the following data points:

- % of Assets with Manager Investment of over $1 million
- % of Assets with Manager Investment of $500,001 to $1 million
- % of Assets with Manager Investment of $100,001 to $500,000
- % of Assets with Manager Investment of $50,001 to $100,000
- % of Assets with Manager Investment of $10,001 to $50,000
- % of Assets with Manager Investment of $1 to $10,000
- % of Assets with Manager Investment of $0
- % of Assets with No Data on Manager Investment

An example of a calculation is below, for fund assets in which the manager invests more than $1 million. The above calculations all follow this structure.

\[ [9] \frac{\sum_{i=1}^{n} f_i}{\sum_{i=1}^{n} f_i} \]
Where

\[ f_i = \text{Fund assets} \]

\[ n_t = \text{The total number of funds assigned to the provider company} \]

\[ n_{ol} = \text{The number of funds in each ownership level assigned to the provider company} \]

In cases in which a fund has multiple managers, this calculation is based on the manager with the highest level of ownership as reported to the SEC. Funds in which the base currency is not the U.S. dollar; funds that are exclusively used by insurance products, retirement plans, or funds of funds; and funds used exclusively within the investment provider are excluded from the calculation.

**Average Fee Level**

Morningstar calculates supercategory fee percentile ranks and fee-level scores for U.S. open-end funds. Rolling up these ratings by investment provider will show the extent to which a fund family offers competitively priced funds. Morningstar's research has shown a correlation between lower expenses and stronger long-term, risk-adjusted returns.

This data point will be offered as a fee-level percentile rank. A mapping of fee-level percentile ranks to fee levels is below.

<table>
<thead>
<tr>
<th>Average fee percentile rank</th>
<th>Fee level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between 1 and 20</td>
<td>Low</td>
</tr>
<tr>
<td>Between 21 and 40</td>
<td>Below Average</td>
</tr>
<tr>
<td>Between 41 and 60</td>
<td>Average</td>
</tr>
<tr>
<td>Between 61 and 80</td>
<td>Above Average</td>
</tr>
<tr>
<td>Between 81 and 100</td>
<td>High</td>
</tr>
</tbody>
</table>

[10]

\[
\frac{1}{n} \sum_{i=1}^{n} p_i
\]

Where

\[ p = \text{Share-class fee-level percentile rank} \]

\[ n = \text{The total number of share classes assigned to the investment provider for which a fee-level rank is available} \]

Share classes with no fee-level percentile ranks are excluded from this calculation.

**Percentage of Share Classes by Fee Level**

The percentage of share classes by fee level takes a more granular view of relative fund expenses than expense ratio and average fee level. These data points break out an investment provider's assets by whether they are inexpensive, comparable, or more expensive than their supercategory peers. This data also shows whether a firm's assets are concentrated in reasonably priced offerings or pricey strategies.
Morningstar provides the following data points:
% Share Classes in Low Fee Level
% Share Classes in Below Average Fee Level
% Share Classes in Average Fee Level
% Share Classes in Above Average Fee Level
% Share Classes in High Fee Level

\[ \frac{m}{n} \]

Where

\( n \) = Number of share classes assigned to an investment provider

\( m \) = Number of share classes in the relevant fee-level quintile

Share classes with no fee-level percentile ranks are excluded from this calculation.

**Methodology Changes**

The following is a timeline of significant methodology changes to the Morningstar Investment Provider methodologies.

- **August 2017**
  
  Change of Average Morningstar Rating to a fractional weighted methodology — previously a simple average of the star rating of all share classes assigned to the investment provider.

  Change for the Morningstar Success Ratio and Morningstar Risk-Adjusted success ratio to move to a fund-level calculation from a share-class level calculation.